APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,500	06/30/2000	Bilal Alam	13768.143.1	9663

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EXAMINER
JACOBS, LASHONDA T

ART UNIT	PAPER NUMBER
2157	

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _28 May 2004_.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
  closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-15,17-20,22,24 and 25_ is/are pending in the application.
  4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☐ Claim(s) _____ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  a)☐ All   b)☐ Some * c)☐ None of:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. _____.
    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).
  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
  Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is in response to Applicant's RCE Amendment filed on May 28, 2004.

Claims 1, 17 and 24 have been amended. Claims 1-15, 17-20, 22, 24 and 25 are

presented for further examination.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims **1-4, 6, 8-9, 12-13, 16-19, 21**, and **23** are rejected under 35 U.S.C. 102(e)

as being anticipated by LiVecchi.

As per claims **1** and **17**, LiVecchi discloses a networked environment, wherein

one or more client computer systems make requests for information from a server

computer system, the server computer system providing information in response to the

requests from the one or more client computer systems, the server computer system

having one or more listen sockets and having a backlog queue for queuing connection

requests that the server computer system cannot currently handle, a method of the server

computer system reducing denials of service even though the server computer system is

experiencing a denial of service attack, the method comprising:

- receiving a plurality of connection requests from said one or more client computer systems (col. 1, lines 51-58, col. 3, lines 3-6 and col. 7, lines 22-34);

- establishing a connection socket for at least one of the plurality of connection requests without placing the connection request in a backlog queue (col. 1, lines 51-58. col. 3, lines 3-6, col. 7, lines 22-34, col. 10, lines 52-56 and col. 11, lines 1-15);

- for each connection request for which the server computer system cannot handle currently handle establish a connection socket , placing the connection request in the backlog queue without then establishing a connection socket, wherein the backlog queue is capable of containing connection requests that include associated request data and connection requests that do not include associated request data (col. 13, lines 15-46);

- determining that the backlog queue is being used (col. 13, lines 15-46);

- in response to the determination, identifying any connection sockets that have no received request data (col. 15, line 67, col. 16, lines 1-10 and lines 18-67); and

- disconnecting the identified connections sockets (col. 15, line 67, col. 16, lines 1-10 and lines 18-67).

As per claim 2, LiVecchi further discloses:

- mapping each connection request to a corresponding listen socket (col. 3, lines 16-40 and col. 12, lines 5-22).

As per claim 3, LiVecchi discloses:

- wherein each listen socket has a corresponding backlog queue (col. 13, lines 15-46, col. 15, line 67 and col. 16, lines 1-10).

As per claims **4** and **19**, LiVecchi discloses:

- wherein placing the connection request in a backlog queue comprises placing the

  request in the backlog queue corresponding to the listen socket that the

  connection request mapped to (col. 3, lines 16-40, col. 12, lines 5-22, col. 15,

  line 67 and col. 16, lines 1-10).

As per claim **6**, LiVecchi discloses:

- wherein establishing a connection socket for at least one of the plurality of

  connection requests comprises calling a module that accepts connections and

  waits for associated request data before completing (col. 9, lines 66-67, col. 10,

  lines 1-18, lines 27-47, col. 11, lines 66-67, col. 12, lines 1-35 and col. 16, lines

  18-67).

As per claim **8**, LiVecchi further discloses:

- monitoring the backlog queue, the determination being made while monitoring

  the backlog queue (col. 3, lines 16-29, lines 15-46 and col. 15, lines 13-36).

As per claim **9**, LiVecchi discloses:

- wherein determining that the backlog queue is being used comprises detecting

  that the module that scans at least the backlog queue has returned (col. 3, lines

  16-40, col. 9, lines 66-67, col. 10, lines 1-18, lines 27-47, col. 11, lines 66-67,

  col. 12, lines 1-35 and col. 16, lines 18-67).

As per claim **12**, LiVecchi discloses:

- wherein monitoring the backlog queue comprises calling a module that scans at

  least the backlog queue for activity (col. 3, lines 16-40, col. 9, lines 66-67, col.

10, lines 1-18, lines 27-47, col. 11, lines 66-67, col. 12, lines 1-35 and col. 16,

lines 18-67).

As per claim **13**, LiVecchi discloses wherein identifying any connection sockets that

have connections but no received request data comprises the following:

- calling a module that identifies the state of the connection socket (col. 15, line

  67, col. 16, lines 1-10, and lines 18-67).

As per claim **18**, LiVecchi further discloses:

- computer-executable instructions for mapping each connection request to a

  corresponding listen socket, wherein each listen socket has a corresponding

  backlog queue ().col. 3, lines 16-40, col. 10, lines 27-47, col. 12, lines 5-22, col.

  13, lines 15-46, col. 15, line 67 and col. 16, lines 1-10).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims **5**, **7**, **10-11**, **14-15**, **20**, **22**, and **24-25** are rejected under 35 U.S.C. 103(a)

as being unpatentable over LiVecchi in view of Srikantan et al (hereinafter, "Srikantan",

2001/0029548).

As per claim **5**, LiVecchi discloses:

- wherein establishing a connection socket for at least one of the plurality of

  connection requests (col. 1, lines 51-58, col. 3, lines 3-6 and col. 7, lines 22-34).

However, LiVecchi does not explicitly disclose:

- using a Winsock module.

Srikantan discloses a method and apparatus for handling events received at a media-

streaming server including:

- using a Winsock module (paragraphs 0017-0019, 0030, 0035-0038, 0041-0043

  and 0054-0056).

Given the teaching of Srikantan, it would have been obvious to one of ordinary skill

in the art to modify LiVecchi by specifying the application program interface as Winsock

API module since the same functionality is achieved.

As per claim 7, LiVecchi discloses:

- wherein the module accepts connects and waits for associated request data

  before completing (col. 9, lines 66-67, col. 10, lines 1-18, lines 27-47, col. 11,

  lines 66-67, col. 12, lines 1-35 and col. 16, lines 18-67).

However, LiVecchi does not explicitly disclose:

- a Winsock()AcceptEx()module.

Srikantan discloses a method and apparatus for handling events received at a media-

streaming server including:

- a Winsock()AcceptEx()module (paragraphs 0017-0019, 0030, 0035-0038, 0041-

  0043 and 0054-0056).

Given the teaching of Srikantan, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as Winsock API module since the same functionality is achieved.

As per claim **10**, LiVecchi discloses:

- wherein the module that scans at least the backlog queue for activity (col. 3, lines 16-40, col. 9, lines 66-67, col. 10, lines 1-18, lines 27-47, col. 13, lines 15-46, col. 15, line 67, col. 16, lines 1-10 and lines 18-67).

However, LiVeechi does not explicitly disclose:

- Winsock()select()module.

Srikantan discloses a method and apparatus for handling events received at a media-streaming server including:

- Winsock()select()module (paragraphs 0017-0019, 0030, 0035-0038, 0041-0043 and 0054-0056).

Given the teaching of Srikantan, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as Winsock API module since the same functionality is achieved.

As per claim **11**, LiVecchi discloses:

- wherein determining that the backlog queue is being (col. 3, lines 16-29, col. 13, lines 15-46 and col. 15, lines 13-36)

However, LiVecchi does not explicitly disclose:

- detecting that the Winsock()select()module has returned.

Srikantan discloses a method and apparatus for handling events received at a media-streaming server including:

- detecting that the Winsock()select()module has returned (paragraphs 0017-0019,

   0030, 0035-0038, 0041-0043 and 0054-0056).

Given the teaching of Srikantan, it would have been obvious to one of ordinary skill

in the art to modify LiVecchi by specifying the application program interface as Winsock

API module since the same functionality is achieved.

As per claim **14**, LiVecchi discloses:

- wherein the module that identifies the state of the connection socket (col. 1, lines

   51-58, col. 3, lines 3-6 and col. 7, lines 22-34)

However, LiVecchi does not explicitly disclose:

- a Winsock()getsockopt()module.

Srikantan discloses a method and apparatus for handling events received at a media-

streaming server including:

- a Winsock()getsockopt()module (paragraphs 0017-0019, 0030, 0035-0038,

   0041-0043 and 0054-0056).

Given the teaching of Srikantan, it would have been obvious to one of ordinary skill

in the art to modify LiVecchi by specifying the application program interface as Winsock

API module since the same functionality is achieved.

As per claim **20**, LiVecchi further discloses:

- computer-executable instructions establishing a connection socket for at least

   one of the plurality of connection requests (col. 1, lines 51-58, col. 3, lines 306

   and col. 7, lines 22-34).

However, LiVecchi does not explicitly disclose:

- at least portions of Winsock module.

Srikantan discloses a method and apparatus for handling events received at a media-streaming server including:

- at least portions of Winsock module (paragraphs 0017-0019, 0030, 0035-0038, 0041-0043 and 0054-0056).

Given the teaching of Srikantan, it would have been obvious to one of ordinary skill in the art to modify LiVecchi by specifying the application program interface as Winsock API module since the same functionality is achieved.

As per claim **24**, LiVecchi discloses a networked environment, wherein one or more client computer system make requests for information from a server computer system, the server computer system providing information in response to the requests from the one or more client computer systems, the server computer system having one or more listen sockets, each listen socket having a backlog queue for queuing connection requests that the server computer system cannot currently handle, a method of the server computing system reducing denials of service even though the server computer system is experiencing a denial of service attack, the method comprising:

- receiving a plurality of connection requests from said one or more client computer systems (col. 1, lines 51-58, col. 3, lines 3-6 and col. 7, lines 22-34);

- establishing a connection socket for at least one of the plurality of connection requests module without placing the connection request in a backlog queue (col. 1, lines 51-58, col. 3, lines 3-6, col. 7, lines 22-34, col. 10, lines 52-56 and col. 11, lines 1-15);

- mapping each connection request to a corresponding listen socket (col. 3, lines 16-40 and col. 12, lines 5-22);

- for each connection request for which the server computer system cannot handle
  currently handle establish a connection socket , placing the connection request in
  the backlog queue without then establishing a connection socket, wherein the
  backlog queue is capable of containing connection requests that include
  associated request data and connection requests that do not include associated
  request data (col. 13, lines 15-46);

- monitoring the backlog queue (col. 3, lines 16-29, col. 13, lines 15-46 and col.
  15, lines 13-36);

- determining that the backlog queue is being used (col. 3, lines 16-29, col. 13,
  lines 15-46 and col. 15, lines 13-36);

- identifying any connection sockets that have connections but no received request
  data (col. 15, line 67, col. 16, lines 1-10 and 18-67); and

- disconnecting the identified connection sockets (col. 15, line 67, col. 16, lines 1-
  10 and line 18-67).

However, LiVecchi does not explicitly disclose:

- at least portions of Winsock module.

Srikantan discloses a method and apparatus for handling events received at a media-
streaming server including:

- at least portions of Winsock module (paragraphs 0017-0019, 0030, 0035-0038,
  0041-0043 and 0054-0056).

Given the teaching of Srikantan, it would have been obvious to one of ordinary skill
in the art to modify LiVecchi by specifying the application program interface as Winsock
API module since the same functionality is achieved.

As per claims **15**, **22**, and **25**, LiVecchi further discloses:

- specifying a grace period spanning the time the backlog queue is determined to

  be used and the time the identified sockets are disconnected, wherein the

  disconnection is performed only if the backlog queue still has entries after the

  grace period (col. 13, lines 15-67 and col. 14, lines 1-26).

Response to Arguments

The Office notes the following arguments:

a. LiVecchi is directed towards thread scheduling techniques for multithreaded servers

(LiVecchi, Title), and is not directed towards countering denial of service attacks. As

part of the thread scheduling, however, LiVecchi teaches various queuing techniques for

responding to incoming requests.

b. LiVecchi does not disclose a backlog queue that includes connection requests without

regard for whether or not the connection requests include associated data.

(a) In response to applicant's arguments, the recitation "the independent claims

specifically recite that the claim is directed towards a method of the server computer

system reducing denials of service" has not been given patentable weight because the

recitation occurs in the preamble. A preamble is generally not accorded any patentable

weight where it merely recites the purpose of a process or the intended use of a structure,

and where the body of the claim does not depend on the preamble for completeness but,

instead, the process steps or structural limitations are able to stand alone. See *In re*

Hirao, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152,

88 USPQ 478, 481 (CCPA 1951).

(b) LiVecchi discloses a queue backlog that maintains connection requests with and

without associated data (col. 13, lines 15-47). Therefore, LiVecchi does disclose a

backlog queue that includes connection requests without regard for whether or not the

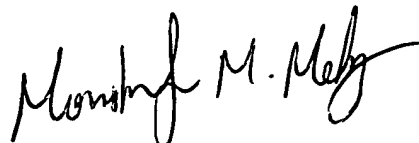connection requests include associated data.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to LaShonda T. Jacobs whose telephone number is 703-305-

7494. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ario Etienne can be reached on 703-308-7562. The fax phone numbers for

the organization where this application or proceeding is assigned are 703-746-7239 for

regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-305-

3900.

LaShonda T. Jacobs
Examiner
Art Unit 2157
8/3/2004

MOUSTAFA M. MEKY
PRIMARY EXAMINER